

TYBT - Licb

2 Hours 30 minutes

Total Marks: 75

1. Attempt all questions.
2. All questions carry equal marks.
3. Draw neat labelled diagrams wherever necessary.
4. Use of log tables and non-programmable calculators is allowed.

Q.1 Select the correct alternative: (Any Fifteen)

15

- 1 Which of the following physiological barriers prevents drugs from reaching the fetal circulation?
 - a. Blood-brain barrier
 - b. Blood-testis barrier
 - c. Blood-placenta barrier
 - d. Lymphatic system
- 2 The therapeutic index (TI) of a drug is calculated as _____.
 - a. $TI = LD_{50} / ED_{50}$
 - b. $TI = ED_{50} / LD_{50}$
 - c. $TI = \text{Potency} \times \text{Efficacy}$
 - d. $TI = \text{Intrinsic activity} \times \text{Bioavailability}$
- 3 Which of the following is a physiological factor affecting drug absorption?
 - a. Molecular weight of the drug
 - b. Route of administration
 - c. pH of the gastrointestinal tract
 - d. Chemical stability of the drug
- 4 Drug potency is determined by _____.
 - a. Affinity alone
 - b. Efficacy alone
 - c. Affinity and efficacy
 - d. Affinity and intrinsic activity
- 5 Which of the following statements about the dose-response relationship is TRUE?
 - a. The effect of a drug increases indefinitely with the dose
 - b. Increasing the dose always increases the drug's potency
 - c. A plateau is reached where further dose increase does not enhance the effect
 - d. The dose-response curve is always linear
- 6 The _____ tragedy led to the pathway for Pharmacovigilance as a field of study.
 - a. Tetracycline
 - b. Thalidomide
 - c. Practolol
 - d. Benoxaprofen
- 7 Which among the following is NOT a criterion for a serious ADR?
 - a. fatal
 - b. life-threatening
 - c. long-term hospitalisation
 - d. trauma
- 8 Practolol was marketed as a drug to treat _____.
 - a. diabetes
 - b. angina and hypertension
 - c. migraine
 - d. epilepsy
- 9 Expand 'AUC' in terms of pharmacokinetics.
 - a. Area Union Curve
 - b. Area Upper Curve
 - c. Area Under Curve
 - d. Area Used Curve
- 10 Drug concentrations are measured in samples typically taken from the _____ vein.
 - a. brachial
 - b. cranial
 - c. peripheral
 - d. spider
- 11 A low threshold to the normal pharmacodynamics action of a drug is called _____.
 - a. Secondary effects
 - b. Toxicity
 - c. Intolerance
 - d. Idiosyncrasy

- 12 If a poison has been inhaled or absorbed through the skin, the patient should be _____.
- a. Taken away from the toxic environment.
 - b. The contaminated clothing was removed.
 - c. Skin cleansed.
 - d. All of these.
- 13 Pharmacopoeia are books that contain directions for _____.
- a. Identification of compound medicine.
 - b. Shelf life of medicinal products.
 - c. Quality specifications.
 - d. Non-pharmacopoeial reference standards.
- 14 Mild lead poisoning ($< 450 \mu\text{g/ml}$) may be treated by _____.
- a. Methanol.
 - b. Removal from exposure and monitoring.
 - c. Use of antidepressants.
 - d. Neither.
- 15 Hydrocarbons in general cause _____.
- a. Keratomalacia.
 - b. CNS depression and pulmonary damage.
 - c. Hepatic damage.
 - d. Neither.
- 16 Name the part of the brain which is divided in 2 hemispheres.
- a. Cerebellum
 - b. Cerebrum
 - c. Medulla oblongata
 - d. Pons
- 17 Depolarization effect during the nerve propagation results in _____ potential of the nerve cells.
- a. Resting
 - b. action
 - c. Neutral
 - d. inhibitory
- 18 The muscarinic receptors, which are found in many autonomic neurons, are specifically inhibited by _____.
- a. Atropine
 - b. GABA
 - c. L-DOPA
 - d. Serotonin
- 19 How many calcium ions are needed to release one clathrin-coated vesicle?
- a. 2
 - b. 4
 - c. 6
 - d. 10
- 20 Gap junctions are made of _____ proteins.
- a. Connexins
 - b. Adherins
 - c. cyclins
 - d. MPFs

Q2A) Explain drug receptors and their biological responses. 8

Q2B) Explain the concepts of drug potency and intrinsic activity. 7

OR

Q2C) Describe the mechanisms involved in drug absorption through the lungs and skin. 8

Q2D) Discuss the physiological barriers to drug distribution, such as the blood-brain barrier and blood-placenta barrier. 7

Q3A) Define Bioavailability. Write an account on 'Bioavailability as a Pharmacokinetic parameter.' 8

Q3B) Discuss the 'The Vigor Trial' of rofecoxib and naproxen which proved to be the first indication of drug safety issue of recent years. 7

OR

- Q3C) Discuss the importance of studying the 'Volume of Distribution (Vd)' as a pharmacokinetic parameter. 8
- Q3D) How has the Thalidomide tragedy led to the development of Pharmacovigilance? Discuss the important lessons learnt. 7
- Q4A) What are allergic reactions? Explain their classification in detail. 8
- Q4B) Explain in detail clinical features of methanol poisoning. Add a note on therapy used to treat methanol poisoning. 7
- OR
- Q4C) Explain in detail the different reasons for adverse drug reactions. 8
- Q4D) What is pharmacopoeia? Describe the types of pharmacopoeia. 7
- Q5A) Describe the structure of 8
- a) Cerebellum
 - b) Basal parts and 3 protective coverings of the brain.
- Q5B) Write a note on Gap junction and Synapse. 7
- OR
- Q5C) Discuss in detail the propagation of the nerve impulse 8
- Q5D) Give two examples of established neurotransmitters and also discuss 5 criteria of established neurotransmitters. 7